

Amendments To the Claims

Claim 1 (Original): A surface mount MELF capacitor comprising:
a wire having opposite first and second end surfaces and side surface;
a conductive powder element electrically connected to the wire exposing the second and first end surfaces, and covering the wire side surfaces;
insulative material surrounding at least a portion of the conductive powder element and a portion of the wire side surfaces;
a first terminal formed by a first body of conductive material disposed over the first end surface of the wire and a portion of the insulating material; and
a second terminal formed by a second body of conductive material disposed over the conductive powder element and being electrically connected to the second end of the conductive powder element.

Claim 2 (Original): The surface mount MELF capacitor of claim 1 wherein the first terminal is an anode and the second terminal is a cathode end.

Claim 3 (Original): The surface mount MELF capacitor of claim 1 wherein the conductive powder element is made of powder.

Claim 4 (Original): The surface mount MELF capacitor of claim 3 wherein the powder is from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

Claim 5 (Original): The surface mount MELF capacitor of claim 3 wherein the powder is a substrate of a metal from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

Claim 6 (Original): The surface mount MELF capacitor of claim 3 wherein the powder has been electrophoretically deposited upon the wire.

Claim 7 (Original): The surface mount MELF capacitor of claim 1 wherein the conductive powder element has a density between 3-8 g/cc.

Claim 8 (Original): The surface mount MELF capacitor of claim 1 wherein the conductive powder element has a capacitance-voltage between 10 CV and 150 KCV.

Claim 9 (Withdrawn): A method of creating a surface mount MELF capacitor comprising:
providing a wire having opposite first and second end surfaces and side surfaces;
forming a conductive powder element upon the wire;
the conductive powder element having a cathode end, an anode end, and conductive powder element sides extending between the anode and cathode ends
exposing the first and second ends and a portion of the wire side surfaces;
applying an insulation material over the cathode end, the conductive powder element, and wire first and second ends;
exposing the first end and a portion of the cathode end;
applying an anode layer of conductive material over the wire first end and the exterior surface of the insulation material adjacent the anode end of the conductive powder element so that the anode layer of conductive material is in electrical contact with and covers the wire end; and
applying a cathode layer of conductive material over the exposed portion of the cathode end of the conductive powder element.

Claim 10 (Withdrawn): The method of claim 10 further comprising the step arranging the wire for acceptance into a reel to reel process.

Claim 11 (Withdrawn): The method of claim 9 further comprising electrophoretically depositing the powder upon the wire.

Claim 12 (Withdrawn): The method of claim 11 wherein the powder is from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

Claim 13 (Withdrawn): The method of claim 11 wherein the powder is a substrate of a metal from the group consisting of: Ta, Nb, Hf, Zr, Ti, V, W, Be, and Al.

Claim 14 (Withdrawn): The method of claim 11 wherein the conductive powder element has a density between 3-8 g/cc.

Claim 15 (Withdrawn): The method of claim 11 wherein the conductive powder element has a capacitance-voltage between 10 CV and 150 KCV.

Claim 16 (Withdrawn): The method of claim 9 wherein the step of exposing is performed using laser cutting.

Claim 17 (New): A surface mount MELF capacitor comprising:
a wire having opposite first and second ends and a side surface;
a conductive powder element having been electrophonetically deposited around the side surface;
a dielectric film formed around the conductive powder element;
a solid electrolyte formed around the dielectric film;
a conductive counterelectrode layer formed around the solid electrolyte;
a first and second portion of the side surface adjacent the first and second end surfaces exposed without the conductive powder element, the dielectric film, the solid electrolyte, and the conductive counterelectrode layer;
the first portion having an inner and outer part, an insulative layer formed around the conductive counterelectrode layer, the second portion of the side surface, and the inner part of the first portion;
an anode terminal of conductive material disposed upon the outer part of the first portion and a portion of the insulating material;

an opening formed in the insulative layer exposing the conductive counterelectrode layer, a cathode terminal of conductive material disposed within the opening.

Claim 18 (New): The surface mount MELF capacitor of claim 17 wherein the conductive counterelectrode layer has a carbon graphite layer in contact around the solid electrolyte and a silver layer around the carbon graphite layer.

Claim 19 (New): The surface mount MELF capacitor of claim 17 wherein the first and second portion of the side surface are formed by laser cutting through the conductive powder element, the dielectric film, the solid electrolyte, and the conductive counterelectrode layer.

Claim 20 (New): The surface mount MELF capacitor of claim 17 wherein the insulative layer opening is formed by laser cutting through the insulation.

Claim 21 (New): The surface mount MELF capacitor of claim 17 wherein the anode terminal and cathode terminal are in horizontal alignment around a circumference outside the insulation layer.

Claim 22 (New): The surface mount MELF capacitor of claim 17 wherein the conductive powder element has a density between 3-8 g/cc.

Claim 23 (New): The surface mount MELF capacitor of claim 17 wherein the conductive powder element has a capacitance voltage between 10CV and 150KCV.

Claim 24 (New): A series of surface mount MELF capacitors produced using a reel to reel process, the series comprising:
a wire having opposite first and second ends and an outer circumference;

a plurality of spaced apart surface mount MELF capacitors that have been formed upon the wire;
each surface mount MELF capacitor having:

- a conductive powder element electrophonetically deposited upon the wire and defined by
 - a first and second portion of exposed wire, the first portion having an inner part and an outer part;
- an insulative layer formed around the conductive powder element the second portion of exposed wire and the inner part of the first portion;
- an anode terminal of conductive material disposed upon the outer part of the first portion and a portion of the insulating material;
- a cathode terminal of conductive material disposed within an opening formed in the insulative layer and in contact with the conductive powder element.

Claim 25 (New): The series of surface mount MELF capacitors of claim 24 further comprising a cut point between each surface mount MELF capacitor.

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